

IOANNISYAN, A.I., doktor tekhn. nauk, prof.; KANTOR, Y.I., kand.
tekhn. nauk, dotsent

Selecting the train weight in the planning of new railroads
with a.c. electric traction. Trudy MIIT no.158:32-78 '62.
(MIRA 16:6)

(Railroad engineering)
(Electric railroads)

IOANNISYAN, Ashot Issayevich, doktor tekhn. nauk, prof. Prini-
mal uchastiye: VERTSMAN, G.Z., kand. tekhn. nauk;
MURASHKIN, I.N., inzh.; KANTOR, I.I., kand. tekhn. nauk
red.

[Surveying, design and planning of railroads] Izyskaniia
i proektirovanie zheleznykh dorog. 3., perer. izd. Mo-
skva, Transport, 1965. 411 p. (MIRA 18:5)

1. Moskovskiy institut inzhenerov zheleznodorozhnogo
transporta (for Ioannisyan).

IOANNISYAN, N.K.

Analytical expression of the equations of water hammer in pipelines with a closed end. Izv. AN Arm. SSR. Ser. tekhn. nauk 14 no.3:3-12 '61. (MIRA 14:8)

1. Institut energetiki i gidravliki AN Armyanskoy SSR.
(Water hammer)

BUNNATYAN, B.L.; IOANNISYAN, N.K.

Angular momentum of a hydraulic turbine in transient processes.
Izv. AN Arm. SSR. Ser. fiz.-mat. nauk 14 no.3:133-138 '61.

(MIRA 14:8)

1. Institut energetiki i gidravliki AN Armyanskoy SSR.
(Hydraulic turbines)

IOANNISYAN, N.K.

Sufficient conditions for dynamic stability of the control of
a hydraulic turbine-generator unit. Izv. AN Arm.SSR. Ser. tekhn. nauk
16 no.2/3:109-116 '63. (MIRA 16:9)
(Hydroelectric power stations) (Automatic control)

IOANNISYAN, S.A.

Use of 2--6 kv. cable networks in fields of the Ministry of the
Petroleum Industry of the Azerbaijan S.S.R. Energ.biul. no.10:
10-12 0 '56. (MLRA 9:11)

(Azerbaijan--Electric power distribution)
(Electric cables)

IOANNISYAN, S.A.

Experience operating electrical installations in the petroleum
industry. Prom.energ. 12 no.6:3-4 Jo '57. (MIRA 10:7)
(Electric lines)

IOANNISYAN, S.A., inzh.

Distribution devices without linear disconnectors for 6 kv.
system. Prom.energ. 15 no.3:38-40 Mr '60.

(MIRA 13:6)

(Electric power distribution)

IOANNISYAN, S.A., inzh.

Regulations for the installation of electrical systems on the sea.
Prom. energ. 19 no.3:20-21 Mr '64. (MIRA 17:4)

IONNISTAN, S.G.

IONNISTAN, S.G.

Test load for designing grape trellises. Izv. AN Arm. SSR.
Ser. tekhn. nauk 12 no. 6:59-62 '59. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut stroymaterialov i
sooruzheniy Gosstroya Armyanskoy SSR.
(Viticulture--Equipment and supplies)

IOANNISYAN, S. L.

"Improving the Natural Qualities of Local Cattle", Agrobid., 3, 1949

Experimental Base, All-Union Acad. of Agricultural Sci. Im. V. I. Lenin.

IOANNISYAN, S.L., kand. sel'skokhoz. nauk

Developing cattle with high milk and butterfat production in the
Gorki Leninskiye. Agrobiologiya no.4:545-575 Jl-Ag '59.
(MIRA 12:10)

1.Eksperimental'naya baza Instituta genetiki Akademii nauk SSSR,
Gorki Leninskiye.
(Gorki Leninskiye--Dairy cattle)

IOANNISYAN, S.L., kand.sel'skokhoz.nauk

Inheritance of characters acquired by the organism. Biol.v
shkole no.6:81-88 M-D '59. (MIRA 13:3)

1. Eksperimental'naya baza Instituta genetiki AN SSSR, Gorki.
(Inheritance of acquired characters)

IOANNISYAN, Suren Levonovich, kand.sel'skokhoz.nauk; STAROSFENKOVA,
M.M., red.; NAZAROVA, A.S., tekhn.red.

[How the "Gorki Leninski" Experimental Farm built a cattle
herd producing much milk with a high butterfat content]
Kak bylo sozdano vysokoproduktivnoe shirnomolochnoe stado
krupnogo rogatogo skota v "Gorkakh Leninskikh." Moskva, Izd-vo
"Znanie," 1961. 77 p. (Vsesoiuznoe obshchestvo po rasprostraneni
politicheskikh i nauchnykh znani. Ser.5, Sel'skoe khoziaistvo,
nos. 23-24). (MIRA 15:2)

(Butterfat)

(Dairy cattle)

IOANNISYAN, S.L., kand. sel'skokhoz. nauk

Breeding value of animals raised on the livestock farm in
Gorki Leninskiye and their offspring. Agrobiologiya
no.4:483-495 J1-Ag '65. (MIRA 18:11)

1. Eksperimental'naya baza Instituta genetiki AN SSSR,
Gorki Leninskiye.

ESTIMATION OF THE

The machine has been designed to be used in a variety of ways. It can be used as a simple calculator, or it can be used as a more complex machine. The machine has a number of features which make it very useful. It has a large display screen, and it has a number of buttons which can be used to enter data. The machine is very easy to use, and it is very accurate. It is a very useful machine, and it is a very good investment. The machine has a number of features which make it very useful. It has a large display screen, and it has a number of buttons which can be used to enter data. The machine is very easy to use, and it is very accurate. It is a very useful machine, and it is a very good investment.

Card 3/3

1. The first part of the document is devoted to the description of the results of the work carried out in the field of the study of the properties of the compounds of the type $\text{C}_6\text{H}_5\text{N}=\text{N}-\text{C}_6\text{H}_4-\text{N}=\text{N}-\text{C}_6\text{H}_5$ (I) and its derivatives. The results of the study of the properties of the compounds of the type $\text{C}_6\text{H}_5\text{N}=\text{N}-\text{C}_6\text{H}_4-\text{N}=\text{N}-\text{C}_6\text{H}_5$ (I) and its derivatives are presented in the following table.

2. The second part of the document is devoted to the description of the results of the work carried out in the field of the study of the properties of the compounds of the type $\text{C}_6\text{H}_5\text{N}=\text{N}-\text{C}_6\text{H}_4-\text{N}=\text{N}-\text{C}_6\text{H}_5$ (I) and its derivatives. The results of the study of the properties of the compounds of the type $\text{C}_6\text{H}_5\text{N}=\text{N}-\text{C}_6\text{H}_4-\text{N}=\text{N}-\text{C}_6\text{H}_5$ (I) and its derivatives are presented in the following table.

• *Journal of the American Medical Association*, 1990; 263: 1009-1010.

The photos of simple "transistor" circuits are very briefly described. AND, OR, NOT

[illegible]

U.S. DEPARTMENT OF COMMERCE

• *Journal of the American Medical Association*, 1994; 271: 1033-1037

[illegible]

1990年12月15日

ASSOCIATION: 0078

1246 • J. Neurosci., July 26, 2006 • 26(30):1241–1246

5000 1000

אשר יצאנו ממצרים

OTHER: 000

K: Accession No. **EAT(h)**: EWP(h)/EWP(v)EWP(k)/EWP(h)/EWP(h)/EWP(h)
A: accession NR ATSI0944-68 UR/0000/54/397/2d/c/b/d/0-05

Goldyrev, A. I. (Moscow), Goldyrev, Z. M. (Moscow),
Gorokhovskiy, L. T. (Moscow); Ioannisyants, V. V. (Moscow); Mol't, L. I. (Moscow),
Rabinovich, E. V. (Moscow), Sevumyan, Yu. R. (Moscow)

TITLE: Supervisory control machine for aluminum-making industry

SOURCE: Vsesoyuznaya konferentsiya po avtomaticheskomu kontrolyu i metodam
elektricheskikh izmereniy 4th. Novosibirsk, 1962. Avtomaticheskiiy kontrol'
i izmereniya, elektr. tekhn. izmereniy. trudy konferentsiy, t. 2. Teoriya
izmeritel'nykh informatsionnykh sistem. Sistemy avtomaticheskogo kontrolya.
Izmereniye neelektricheskikh velichin (Automatic control and
electrical measuring technology, transactions of the conference, t. 2. Theory of
measuring systems. Automatic control systems. Measurement
of nonelectrical quantities). Novosibirsk, Rediznat Sib. etc.
USSR, 1964, 140 p.

TOPIC TAGS: supervisory control, aluminum industry / ERA-800 supervisory control

Card 1/3

1 10000-65

ACCESSION NR: AT5013044

CONTRACT A-1111-75 state-made centralized automatic supervisory control machine intended for controlling one series of aluminum-electrolysis processes, is

the machine controls the 160-170 electrolyzers that make up the basis of 5... electrolyzers which deviate from the normal operation... the 2-hr cycle re-order. The process... are printed automatically... the 4th...

Card 2/3

ACCESSION NO. A1913748

600 va. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 17 Nov 64

ENCL. 00

SUB CODE: DP. 23

SEE ALSO: 00

OTHER: 000

Card 3/3

Category : USSR/General Problems - Method and Technique of Investigation

A-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 145

Author : Ioanno, D.K.

Title : On the Possibility of Parametric Excitation of the Poshkhonov Circular Pendulum

Orig Pub : Zh. tekhn. fiziki, 1955, 25, No 13, 2296-2299

Abstract : The author gives a theoretical analysis of the oscillations of proposed small-size system, the kinematic diagram of which is given. The experimental data confirms the calculations. It is established that the Poshkhonov circular pendulum performs parametric oscillations, describable by equations of the Hill type, in response to periodic changes of the moment of inertia.

Card : 1/1

USSR/Physics - Pendulum

FD-3152

Card 1/1 Pub. 153 - 8/26

Author : Ioanno, D. K.

Title : Possibility of parametric excitation of the Poshekhonov circular pendulum

Periodical : Zhur. tekhn. fiz., 25, No 13 (November), 1955, 2296-2299

Abstract : The author derives the equation of motion of the Poshekhonov circular pendulum and reduces it to a nonhomogeneous equation of the Hill type, which by suitable approximations he expresses by the following Mathieu equation $d^2\theta/d\phi^2 + [L^2 + m(L^2 - 2)\cos 2\phi]\theta = 0$. He establishes the boundaries of stable and unstable free parametric oscillations of the system described by this equation. From theoretical calculations and experimental data the author concludes: in the case of periodic variation of moment of inertia of the Poshekhonov circular pendulum parametric oscillations are executed which are described by a Hill-type equation and which change into parametric resonance peculiar to it; in the region of the second parametric resonance one can excite forced resonance by rotation of the base of the pendulum. In spite of a number of simplifying assumptions and only a linear treatment of the problem, the theoretic conclusions in the main give a correct picture of parametric excitation in the system and agree with data of experiments. The author thanks V. L. Patrushev for guidance. Ten references: e.g. B. P. Pertsev, Astr. zhurn., 31, 90, 1954; N. MacLachlan, Mathieu functions (translated into Russian by IIL, 1953).

Institution :

Submitted : June 14, 1955

SOV/124-58-11-12091

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 19 (USSR)

AUTHOR: Ioanno, D. K.

TITLE: On the Stability of the Free Oscillations of a Circular Poshekhonov
Pendulum (K voprosu ob ustoychivosti svobodnykh kolebaniy krugovogo
mayatnika Poshekhonova)

PERIODICAL: Tr. Saratovsk. s.-kh. in-ta, 1957, Vol 10, pp 407-413

ABSTRACT: Examination is made of a mechanical system having two degrees
of freedom, which system the author calls a "circular Poshekhonov
pendulum". As a first approximation it is assumed that one of the
coordinates varies in proportion to the time, whereupon the second
equation assumes the form of an inhomogeneous linear equation with
periodic coefficients. The Lyapunov and Zhukovskiy methods are
used to investigate the zero-th solution of the corresponding homo-
geneous equation.

G. K. Pozharitskiy

Card 1/1

AUTHOR: Ioanno, Dmitriy Konstantinovich, Docent SOV/ 161-58-1-28/33
at the Chair of Physics at the Saratov Agricultural Institute

TITLE: The Parascope, a Parametric Instrument of Measuring Angular Velocity
(Paraskop kak parametricheskiy izmeritel' uglovykh skorostey)

PERIODICAL: Nachnyye doklady vysshey shkoly, Elektromekhanika i avtomatika,
1958, Nr 1, pp. 227 - 233 (USSR)

ABSTRACT: Measuring angular velocity by pulse resonance excitation
in oscillation systems is a new method of measuring angular
velocity. It is successfully used in the design of vibration
gyroscopes of the type "gyrotron" in a number of automatic
systems (Refs 2-5). The general theory of parametric excitation
by Mandel'shtam and Papaleksi was employed in the theoretical
development of the new method. During this development (Ref 7)
a new type of a pick-up transmitter of angular velocity was
discovered. It was called parascope. The foundations of the
general theory of the parascope and its technical characteristics
are exposed. The latter are compared with the experimental
results. According to the general theory the parascope is an
oscillation system with a moment of inertia varying periodically
as the sine or the cosine. Thus the parascope is a parametric

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The Parascope, a Parametric Instrument of Measuring
Angular Velocity

SOV/ 161-58-1-28/33

system. It is very compact. The amplitude of the oscillations of the frame of the parascope is directly proportional to the measured angular velocity. The equation of motion (1) is written down and it is then solved. From the solution the basic technical characteristics can be determined. They include: the sensitivity, the sensitivity threshold, the factor of merit of the system and its dependence upon the parameters of the system, the reaction to an inversion in the direction of rotation, the input power of the following system, the reaction to an angular acceleration and the instability in gyrating the balls. Only such characteristics are investigated which guarantee the fundamental requirements of production: the sensitivity of the system and the reaction to an angular acceleration. Equation (5) shows that the parascope exhibits only an insignificant reaction to an angular acceleration. The relation governing the rise of the amplitude is written down. Test runs were performed with parascoopes in order to check the theoretical conclusions. The experiments were conducted according to the method described in references 7 and 8. They yielded the following results: 1) The parascope can be

Card 2/4

The Parascope, a Parametric Instrument of Measuring
Angular Velocity

SOV/161-58-1-28/33

used not only as an isotoneograph but also as a pick-up transmitter of angular velocity. 2) A number of important advantages is offered by the method of pulse resonance method used in the excitation of parametric instruments for the measurement of angular velocities, as in the parascope. They are listed below: No heavy rotor is needed, the sensitivity can be considerably increased, the reaction to angular accelerations and to a rotation around other axes is negligible, and finally the reaction of the system is very fast. 3) In spite of the limiting assumptions the theoretical conclusions agree with the evidence obtained by experiments with parascope models. V.L.Patrushev, Doctor of Technical Sciences supervised the work. There are 2 figures, 3 tables, and 8 references, 5 of which are Soviet.

ASSOCIATION:

Kafedra fiziki Saratovskogo sel'skokhozyaystvennogo instituta
(The Chair of Physics at the
Saratov Agricultural Institute)

Card 3/4

The Parascope, a Parametric Instrument of Measuring
Angular Velocity

SOV/ 161-58-1-28/33

SUBMITTED: December 20, 1957

Card 4/4

IOANNO, D. K., Candidate Phys-Math Sci (diss) -- "The measurement of angular velocities by the method of parametric excitation". Moscow, 1959. 7 pp (Min Higher Educ USSR, Moscow State U im M. V. Lomonosov, Mech-Math Faculty), 210 copies (KL, No 22, 1959, 108)

IRZHEVSKIY, V.P., inzh.; KOMEYKO, A.I.; IOANNO, M.G.

Control panels of automatic refrigerating units. Khol. tekhn. 38
no. 1:15-17 Ja-F '61. (MIRA 14:4)

1. Proyektno-konstruktorskiy institut Pishcheprom.
(Refrigeration and refrigerating machinery)

IOAN VICI, I.

Some problems relative to the organization of measurements in the machine industry.

p. 52 (Metalurgia Si Constructia De Masini. Vol. 9, no. 9, Sept, 1957. Bucuresti, Rumania)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

PASCALAU, M.; IOANOVICIU, D.

A mass spectrometer for the determination of subnatural concentrations of deuterium in hydrogen. Studii cerc fiz 14 no.6:763-768 '63.

1. Institutul de fizica atomica, Sectia V, Cluj.

IOAN SAVA, V.

Standardization of the technological process in the machine-construction industry enhancing production rentability. p.799

METALURGIA SI CONSTRUCTIA DE MASINI. (Ministerul Industrii Metalurgice si Constructiilor de Masini si Asociatia Stiintifica a Inginerilor si Technicienilor din Romania) Bucuresti, Romania
Vol.11, no.9, 1959

Monthly List of East European Accessions (EMAI) IC Vol.9, no.2, Feb. 1960

Uncl.

IOARDANOV, Em.

Two cases of shortening of healthy lower extremities. Khirurgia, Sofia
10 no.10:943-946 1957.

1. Iz klinika na ortopedia i travmatologia - Isul.
(HIP, dis.
shortening of healthy lower extremity)
(LEGS
shortening of healthy leg in dis. of hip)

MIKHAYLOV, G.P.; IOBANOV, A.M.; SHEVELEV, V.A.

Temperature dependence of the dipole-elastic relaxation time of
polymers. *Vysokom.sped.* 3 no.5:794-797 My '61. (MIRA 14:5)

1. Institut vysokomolekulyarnykh soyedineniy AN S SSR.
(Polymers)

USSR / Farm Animals... Silkworm.....

Q-6

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54876.

Author : Iobashvili, M. Ye.

Inst : Not given.

Title : The New White Cocoon Breeds and the Hybrids of
the Mulberry-Feeding Silkworm.

Orig Pub: Byul. nauchno-tekhn. inform. Gruz. n.-i. in-ta
shelkovodstva, 1956, 1, 21-24.

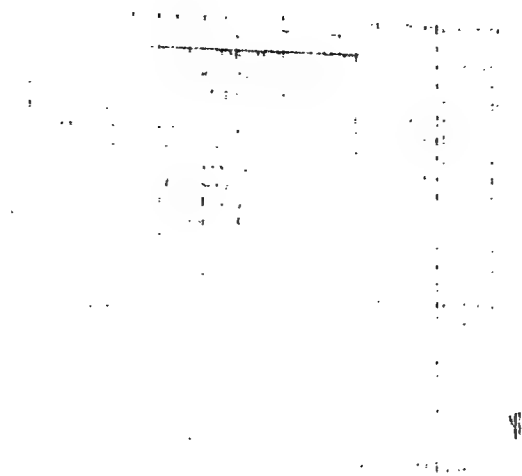
Abstract: No abstract.

Card 1/1

"APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000618620008-0

LEBASTVILLE, N.M.



APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000618620008-0"

IOBASHVILI, N.M.; GIONTI, Sh.I.

Forensic chemical study of norsulfazole and the duration of its
preservation in the organs of the corpse. Soob. AN Gruz. SSR 35
no.1:231-234 JI '64. (MIRA 17:10)

USSR / Forestry. Dendrology.

K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29535.

Author : ~~Iobashvili, V. A.~~

Inst : The Georgian Agricultural Institute.

Title : The Bioecological Conditions of Growth and Development of Japanese Bamboo in the Gul'ripshskiy Kolkhoz im. Il'ich.
(Bioekologicheskiye usloviya rosta i razvitiya yaponskogo bambuka v Gul'ripshskom kolkhoze im. Il'icha).

Orig Pub: Nauchn. tr. stud. Gruz. s.-kh. in-t, 1957, 6-7, 30-45.

Abstract: No abstract.

Card 1/1

43

1081DZE

COUNTRY : USSR
 CATEGORY : Cultivated Plants. Fruits. Berries. M
 ABS. JOUR. : RZhBiol., No. 23 1958, No. 104825
 AUTHOR : Iobidze
 INST. : Institute of Horticulture, Viticulture and *)
 TITLE : Wild Grapevine.
 ORIG. PUB. : Sakartvelos kolmeurne, 1957, No. 6, 27
 ABSTRACT : At Gudantskaya Base Station (Abkhaz Autonomous SSR) of the
 Institute of Horticulture, Viticulture and Wine
 making, several forms of wild grapevine grow in the
 collection of 210 European grapevine varieties. Wine
 made from wild grapes was distinguished by rich coloration,
 medium extractability and pleasant sweetness; it contained
 12% of alcohol and 4.3 grams/liter of titratable acid.

*) Wine Making

CARD: 1/2

133

COUNTRY :
CATEGORY :

ABS. JOUR. : RZhBiol., No. 23 1958, No. 104825

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : Wines from the old varieties of western Georgia are also distinguished by considerable potency and pleasant sweetness. In the old days they were known under the name "Kolkhidskiye". The similarity of "Kolkhidskiye" wines and wine from wild grapes, permitted the author to voice a thought on the origin of the cultivated grapevine varieties of Georgia from the local wild forms growing universally in the viticultural regions of Georgia. --
S. I. Tabidze

CARD: 2/2

VINOGRADOVA, Ye.N., IOBST, K.

Removal of ultramminute quantities of heavy metal impurities from solutions of neutral salts to be used as polarographic background. Zav.lab. 26 no.7:796-797 '60. (MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomono-
sova.

(Polarography) (Metals) (Salts)

TRUFANOVA, A. S., uchitel'nitsa; KHOLODENKO, L. P., uchitel'nitsa;
OBLACHKO, V. G., uchitel'nitsa; POLOGRUDOV, V. A. (g. Kemerovo);
IOCH, E. V., uchitel'

Editor's mail. Khim. v shkole 17 no.4:87-89 J1-Ag '62.
(MIRA 15:10)

1. Srednyaya shkola No. 26, Orel (for Trufanova). 2. Srednyaya
shkola No. 11, Ussuriysk (for Kholodenko). 3. Srednyaya shkola
No. 3 Kubanskogo zernosovkhoa Krasnodarskogo kraya (for
Oblachko). 4. Kirovskaya srednyaya shkola, Primorskiy kray
(for Ioch).

(Chemistry—Study and teaching)

IOCH, E., aspirant

Motion-picture rounds and motion-picture fragments. Khim. v shkole 18
no.6:89-90 N-D '63. (MIRA 17:1)

1. Kafedra nauchnogo kino Vsesoyuznogo gosudarstvennogo instituta
kinematografii.

IOCHEV, I.D.

A simple device for detecting faults in loudspeakers. Soldering
of polyvinyl chloride cables. Radio i televiziia 11 no.11:349-
350 '62.

BULGARIA

B. TASKOV, Gr. NESHEV and St. IOCHEV, Department of Infectious Diseases, Medical College (Katedra po infektsiozni bolesti pri VMI) "I.P. Pavlov," Head (Rukovoditel na katedrata) Prof Iv. ANDREEV, Plovdiv.

"Therapeutic Effect of Some Antibiotics in Dysentery and Typhoid Fever."

Sofia, Suvremenna Meditsina, Vol 14, No 5, 1963; pp 21-24.

Abstract : Data on 708 patients with dysentery and 145 with typhoid fever, treated with various antibiotics of the chloramphenicol, streptomycin and tetracycline groups; chloramphenicol was most effective, streptomycin least. Sulfathiazole was used in conjunction. In vitro tests were not always reliable predictors of clinical response. Effects generally good but recurrences may be even more frequent with antibiotic treatment - thus 13% of 145 antibiotic-treated patients had recurrences but none of 30 patients with typhoid fever treated without antibiotics.

1/1

JOCEVICIENE, J.

USSR / Human and Animal Physiology (Normal and Pathological). Nervous System. General Problems T

Abs Jour: Ref Zhur-Biologiya, No 21, 1958, 97850

Author : Jocevicene, J.

Inst : Kaunas Medical Institute

Title : Cutaneous Galvanometry in Insult of the Brain

Orig Pub: Kauno med. inst. darbai, Tr. Kaunassk. med. in-ta,
1957, 5, 161-173

Abstract: No abstract.

Card 1/1

79

25(1)

PHASE I BOOK EXPLOITATION

SOV/1500

Vasilevskiy, P. F., B.B. Gulyayev, D.P. Ivanov, V.V. Ioda, I.P. Karev,
G.I. Kletskin, A.G. Korotkov, A.S. Murakhin, Yu.A. Nekhendzi, P.G.
Petrov, and M.A. Smelov

Liteynaya tekhnika; 2-ya Mezhdunarodnaya vystavka liteynoy tekhniki i liteynyye
tsekh FRG i GDR (Foundry Technology; Second International Exhibition of
Foundry Technology and the Foundries of the FRG and GDR) Moscow, Mashgiz, 1958.
212 p. 3,500 copies printed.

Ed.: P.F. Vasilevskiy; Ed. of Publishing House: A.I. Sirotin, Engineer; Tech. Ed.:
A.Ya. Tikhanov; Managing Ed. for Literature on Heavy Machine Building (Mashgiz):
S.Ya. Golovin, Engineer.

PURPOSE: The purpose of this book is to acquaint readers with new developments in
foundry technology as presented at the 23rd International Congress of Foundrymen
held in Dusseldorf, Germany in 1956.

COVERAGE: The Soviet delegation under the leadership of P.G. Petrov, Engineer, and
his deputy D.P. Ivanov, along with nine other engineers, attended the Congress of

Card 1/6

Foundry Technology (Cont.)

SOV/1500

Foundrymen and the Foundry Exhibition held in Duesseldorf September 1 to 9, 1956. In this book the delegates present a joint report on the state of art in the foundries and research institutes which they visited. The book contains many photographs and diagrams of the machinery and equipment used in foundries and also photographs of finished foundry products. Illustrations accompany the technical descriptions and technical data. One chapter deals with leading German foundries and the major automotive and machine-building plants which maintain their own foundries. Another chapter deals with research and scientific institutes in Germany in which problems of melting and casting are studied. Finally, the authors attempt to evaluate German methods and techniques and compare them with their own. There are no references.

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80V/1500

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Foundry Technology (Cont.)

80V/1500

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80V/1500

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Foundry Technology (Cont.)

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3. Foundry Institute at the Freiberg Mining Academy (East Germany) 198
4. East German Scientific Research Institute "Central Institute
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General Conclusions

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AVAILABLE: Library of Congress

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5-13-59

Card 6/6

LODANOV, D.; VOLEV, S.

New materials and critical remarks on study of Bulgarian flora. p. 369.

GODISHNIK VOL. 48, no. 1, 1952-53-1953-54 (Published 1955)

Sofiya, Bulgaria

so. EAST EUROPEAN ACCESSIONS LIST VOL. 5, no. 7 July 1956

IODAS, V.O.; KAGAN, L.V.; LINDER, V.B.; NARUZHNYI, B.V.

Oscilloscopic attachment for the electrocardiograph. Med. prom.
14 no. 10:48-49 p '60. (MIRA 13:10)

1. Mediko-instrumental'nyy zavod "Krasnogvardeyets".
(OSCILLOGRAPH) (ELECTROCARDIOGRAPH)

IODELE, P. K.

22504

Iodels. P. K. Voprosu O Proizvodstve Gidravlicheskoj Izbesti Iz
Malovogo Mergelya V Litve Trudy Tekhn. Fak. Kaunassk. Gos. Un-Ta,
I, 1949, S 65-78 — Na Ditou. Yaz. — Rezume Na Rus. Yaz.

SO:

Letopis' No 30, 1949

10DIKAITIS, Y.

JODIKAITIS, Jeronimas; NAINYS, J., red.; MONTRIMAS, R., red.;

ANAITIS, J., tekhn. red.

[Descriptive geometry] Braizomoji geometrija. Vilnius, Valstybine
ir mokslines literaturos leidykla, 1961. 340 p. (MIRA 15:3)
(Geometry, Descriptive)

IODIN, A. S.

USSR/Geophysics - Littoral Dynamics May 53

"Accumulative Forms and Dynamics of Shore Lines,"
V. I. Budanov and A. S. Iodin, Inst of Oceanology,
Acad Sci USSR

Priroda, No 5, pp 108-111

Discuss wind-formed shore lines, sandbars, and spits.

26391

BORODULA, V. A.; TAMARIN, A. I.; IODITSKIY, V. I.; ZABROLSKIY, S. S.

"Investigation of the hydrodynamics and of thermal diffusivity in fluidized systems."

paper submitted for 2nd All-Union Conf on Heat and Mass Transfer, Minsk, 4-12 May 1964.

Inst of Heat and Mass Transfer, AS BSSR, Minsk.

SHTARKAS, Ye.M., kand.med.nauk; IODKAZIS, V., inzhener-gidrogeolog

Utilization of infiltration waters as a source of a central water
supply. Gig. i san. 27 no.3:64-66 Mr 62. (MIRA 15:4)
(KAUNAS—WATER—SUPPLY)

DILYUNAS, I.P. [Diliunas, I.]; IODKAZIS, V.I. [Jodkasis, V.];
SHTARKAS, Ye.M. [Starkas, E.], kand. med. nauk

Sanitary evaluation of the use of river water for artificial
feeding of an intake of underground water. Gig. i san. 28
no.7:64-69 J1 '63. (MIRA 17:1)

1. Iz Vil'nyusskogo nauchno-issledovatel'skogo instituta
epidemiologii i gigiyeny.

IODKO, B.

Largest sintering plant in the world. Na stroi. Ros. 4 no.5:4
My '63. (MIRA 16:5)

1. Upravlyayushchiy trestom Lipetskstroy.
(Lipetsk--Metallurgical plants--Design and construction)

AUTHOR: Iodko, E.A. SOV/130-58-8-7/18
TITLE: New Developments in the Last 10-12 Years in the Field
of the Reduction of Ingot Hot-tops (Novoye za posledniye
10-12 let v oblasti umen'sheniya pribyli slitka)
PERIODICAL: Metallurg, 1958, Nr 8, pp 17 - 20 (USSR)
ABSTRACT: The author points out that although the contraction in
volume of steel on solidification is 2-5.3%, the amount
which is poured into the hot top for the ingot in most
Soviet and foreign works is 15% of the ingot volume. In
discussing ways of reducing this waste, he considers in
most detail the rational design of hot tops. From the
fact that metal solidifies more rapidly in corners, he
concludes that corners should be avoided in hot tops. He
shows that the extreme in this design, a circular-section
hot top (Figure 1) can be unsatisfactory and discusses
designs used at the Makeyevska metallurgicheskiy zavod
(Makeyevka Metallurgical Works) (bipyramidal), the
"Azovstal'" Works (oval cross-section), the Stalinskiy
metallurgicheskiy zavod (Stalino Metallurgical Works)
(cross-section is square at the bottom, changing to
circular at a height of 1/3 of the total hot-top height).

Card1/3

SOV/130-58-8-7/18

New Developments in the Last 10-12 Years in the Field of the
Reduction of Ingot Hot-tops

A firebrick-lined top with cast-iron plates (Figure 3) easily replaced when worn has been adopted at many works. He considers that the use of greater tapers on hot tops is often undesirable and recommends 8-9% taper per side. Because of the importance of thermal insulation, vermiculite brick is a suitable hot-top material but special designs proposed in England have not found wide acceptance because of the fabrication of special bricks being necessary. Bottom-pouring hollow-ware is proposed by the author (Figure 4) as a readily available lining material. At the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Kombinat) an air gap between refractory and casing serves as the insulation. A fireclay diaphragm with a small hole separating the metal in the hot top from that in the ingot mould, although cutting down heat flow from the former, has not been adopted because it involves extra handling. Induction or arc heating is effective but expensive; the Czech method of burning 75% ferrosilicon powder in oxygen proved to be effective but too clumsy for large-scale application and oxygen blowing reduced manganese

Card 2/3

SOV/130-58-8-7/18

New Developments in the Last 10-12 Years in the Field of the
Reduction of Ingot Hot-tops

in parts of the ingot. The author favours the use of hot-top compositions containing fuel and oxidising agents. The reduction of hot-top volume by applying high pressure is not readily applicable in steelworks. The author concludes that better hot-top design is the most promising approach, followed by insulation improvement. Electric heating is suitable for electric melting shops. There are 4 figures.

ASSOCIATION: Zavod "Zaporozhstal'" ("Zaporozhstal'" Works)

1. Steel--Production 2. Steel--Quality control 3. Refractory
materials--Applications

Card 3/3

18(5,7)

SOV/128-59-9-15/25

AUTHOR:

Iodko E.A., Engineer

TITLE:

General Approximate Analytic Solution of the Solidification Rate in Usual Conditions of Castings of Various Shapes

PERIODICAL:

Liteynoye proizvodstvo, 1959, Nr 9, pp 41-42 (USSR)

ABSTRACT:

This article deals with the problem of determining the speed of castings solidification under assumption of the following factors: Solidification of castings occurs gradually from the periphery towards the center; initial temperature of the liquid metal remains constant; metal consolidation begins and ends at the same temperature; temperature of metal does not change during the process of consolidation; density and heat conductivity of liquid metal do not depend on temperature. Fig 2 shows the curve characterizing the process of steel consolidation at different moments. The assumed coefficient of consolidation is $\alpha' = 1.6$. For the sake of comparison, results of the research carried out by I.W.Sprentak were considered. During his experimentation, the initial temperature of metal was in one series of experiments

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SOV/128-59-9-15/25

General Approximate Analytic Solution of the Solidification Rate
in Usual Conditions of Castings of Various Shapes

1565°C, in other-1635°C. The coefficient of temperature conductivity was taken equal to 0.011 m/hour; the coefficient of consolidation - equal to 0.148 m/hr (Fig 6). Both, theoretical and experimentally obtained values coincide close enough. There are 6 graphs and 14 references, 11 of which are Soviet, 2 American and 1 German.

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S/148/60/000/010/004/018
A161/A030

AUTHORS: Druzhinin, V.P.; Iodko, E.A.; Kitayev, A.T.; Krupman, L.I.;
Tarapay, M.A.; Chevela, L.A.; Yankelevich, Ya.P.

TITLE: Investigation of the Thermal Behaviour of Intermediate Ladles

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya,
1960, No. 10, pp. 58 - 66

TEXT: The investigation had been carried out to determine the heat losses from metal in intermediate ladles. Small ladles at the New-Tula Metallurgical Plant and large at the imeni Dzerzhinskiy Plant were studied. The small ladles were heated with blast furnace gas burning in an oxygen jet, and the large with coke gas; chromelalumel and platinum-rhodium-platinum thermocouples were inserted into the ladle linings as shown in Fig. 1 and 2; the metal temperature in ladles was measured with platinum-rhodium-platinum and tungsten-molybdenum immersion thermocouples; indicating and recording galvanometers and an ЭНН -09 (ЭПФ-09) writing potentiometer were used. The duration of teeming was 20 - 26 min at the New Tula Plant (NTMZ) and 80 - 120 min at the imeni Dzerzhinskiy Plant. A graph gives the measurement results in a large ladle (Fig. 3) - there is practically no

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S/148/60/000/010/004/012
A161/A030

Investigation of the Thermal Behaviour of Intermediate Ladles

heat gradient inside the intermediate ladle, apparantly due to a feed of fresh hot metal from the main ladle. The lining temperature on the surface quickly reached the metal temperature; it dropped nearly 180°C during 5 min after the gas heating was stopped before teeming. E.A. Iodko and L.I. Krupman calculated the heating of lining to determine the effect of separate factors. The "working" layer of lining was stated to be 20 - 30 mm in small ladles, and 60 - 80 mm in large, which is less or equal to the usual fireclay lining depth and shows that additional heat insulation of the ladle casings is superfluous. The calculation is included in the article. The formula (13) determines the effect of the heat conductivity of the ladle lining on the drop in metal temperature in the ladle and shows that the relation is in direct proportion. The heat loss by radiation had not been considered. It was concluded that the heat conductivity in fireclay brick layers nearest to the contact surface with metal drops in the teeming process and the first metal portions in the intermediate ladle are cooled by the lining surface, whilst the heat gradient inside the lining has practically no influence. It is therefore proper to heat the lining at a high temperature on the surface ignoring high temperature gradients in the lining below the surface, and not to stop heating the ladle before the start of teeming. Cooling of the first metal

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S/148/60/000/010/004/018
A161/A030

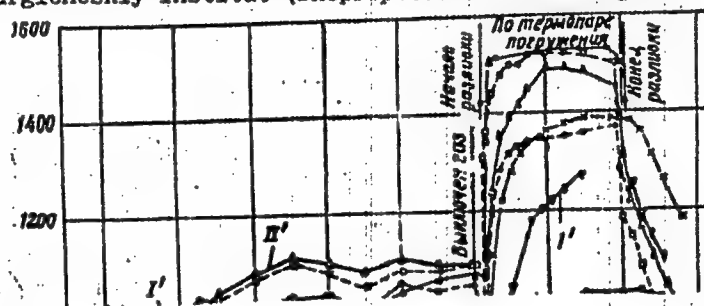
Investigation of Thermal Behaviour of Intermediate Ladles

portions can be decreased by faster filling. Brick with low heat conductivity on the surface must be used. The following participated in the investigation: Ye.I. Isayev, Yu.N. Yakovlev; V.M. Klippa; S.P. Yefimov; G.L. Doronin; S.L. Sologub; N.A. Rokhlin; F.I. Krasinskiy. V.I. Lapitskiy was in charge. There are 6 figures, 2 tables and 4 Soviet references.

ASSOCIATION: Novo-Tul'skiy metallurgicheskiy zavod (New Tula Metallurgic Plant), Zavod imeni Dzerzhinskogo (imeni Dzerzhinskiy Plant), and Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: April 21, 1960

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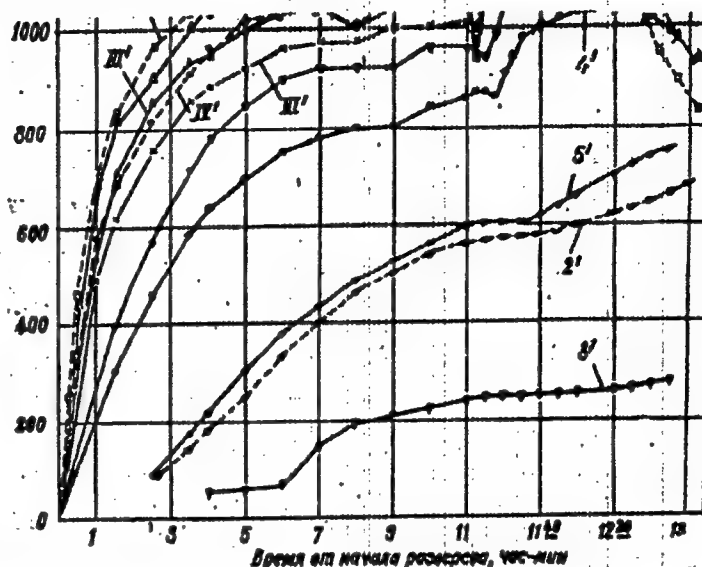


Б/148/60/000/010/004/018
А161/А030

Investigation of Thermal Behaviour of Intermediate Ladles

Figure 3:

Variation of the metal and lining temperature in a large ladle during preheating and teeming. (Temperature from 0 to 1600°C; time from start of preheating from 1 to 13 h).



Card 4/4

IOBKO, E.A.

Nature of external cracks on continuous ingots. Izv. vys.
ucheb. zav.; Chern. met. 4 no.11:60-70 *61. (MIRA 14:12)

1. Dnepropetrovskiy metallurgicheskiy zavod.
(Continuous casting—Defects)
(Thermal stresses)

S/14B/60/000/012/003/020
A161/A131

AUTHOR: Iodko, E. A.

TITLE: Effect of the metal feed method on the longitudinal hotcracking of continuous ingots

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 12, 1960, 31 - 38

TEXT: As is known from the casting practice of common ingots, the method of metal feeding has an effect on the formation of hot cracks on ingots. In continuous casting they cause serious trouble, particularly in the case of killed Cr.3 (St.3) sheet billets. The process has been studied on the continuous casting unit of the Novo-Tul'skiy metallurgicheskiy zavod (Novo-Tula Metallurgical Plant). Hot longitudinal surface cracks form as a rule on the wide ingot faces, and the more this happens the nearer is the central metal jet (in the usual method) to the face and the hotter the metal becomes. It was revealed by electric simulation at the Dnepropetrovsk Metallurgical Institute that overheat can be fully eliminated by local fusing of the forming solid metal crust by pouring through one spout shifted

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Effect of the metal feed method on the...

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A161/A133

to a narrow side of the crystallizer, or through two spouts spaced 400 - 500 mm. The experiment 10-ton heats were poured into 12 - 14 m ingots in the crystallizer no. 2 of the plant (150 x 620 mm). In both methods the cracks became fewer, very thin and shallow, and could be easily removed by chipping. It could not be decided which of the two ways is to be preferred, for with two spouts metal spattered on the frame, and with one spout metal on the farther narrow ingot, the face can be contaminated with coarse slag inclusions. The more convenient method will have to be chosen. In the first method, cracks are very rare on the narrow face at the jet. Normally they appear on the wide face mid. Cracks also occurred once on the corners. It was stated that the crust really was being fused by the metal jet (liquid metal was poured out of the solidifying ingot). At a depth of 800 mm from the meniscus the crust at the pouring side was only 15 mm deep, and on the opposite narrow side it was 24 mm. In 1,100 mm depth, the crust on both narrow sides was equal, 24 mm. The "wash-off" was evidently moved away from the critical spot in the mid of the wide ingot face. It is estimated that the length of surface cracks will be reduced 10 times at the New Tula plant (NTMZ), and the cracks will be removable by chipping. B. I. Lapitskiy head-

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Effect of the metal feed method on the...

S/149/60/000/0:2/003/020
A161/A133

ed the test work, while the tests were carried out with the following people participating: G. V. Gurskiy; V. P. Druzhinin; B. S. Kurdyumov; V. S. Skripchuk; V. S. Rutes; A. V. Leytes; V. S. Pravdin; V. A. Akhtyrskiy; M. A. Tarapay; Yu. N. Yakovlev; I. T. Kushnarev; V. S. Gorelov; Yu. A. Smirnov. There are 4 figures and 2 Soviet-bloc references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: November 10, 1959

Card 3/3

IODKO, E. A., Cand. Tech. Sci. (diss) "Influence of Factors of Pouring on "Porazhennost'" of Continuous Steel Ingot by Surface Longitudinal Cracks," Dnepropetrovsk, 1961, 14 pp. (Inst. Ferr. Metall. Acad. of Sci. UkrSSR) 200 copies (KL Supp 12-61, 267).

S/148/61/000/006/001/013
E194/E435

AUTHOR: Iodko, E.A.

TITLE: Electrical modelling of thermal processes during continuous casting of steel

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1961, No.6, pp.27-33

TEXT: Electrical modelling of a complicated thermal process like solidification of a steel ingot requires complicated and expensive apparatus and it is generally better to use hydraulic modelling. However, D.M.Lewis (Ref.3: Journal of the Inst. of Metals, v.82, 1954, No.8) adopted another approach to modelling of thermal processes during continuous casting and located the origin of coordinates on the stationary surface of the level of the metal in the crystalliser and instead of using Fourier's thermal conductivity equations to describe the temperature distribution in the billet during a transient thermal process he used the Laplace equation to describe the temperature distribution during a steady state thermal process which is easy to model. Lewis's method was used in the present work and, moreover, an attempt is made to provide justification for the approximate transition from the
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Electrical modelling of thermal ...

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E194/E435

Fourier to the Laplace equation. This justification of the use of the Laplace equation is based on the assumption that the temperature distribution is linear across the thickness of the solidified metal crust on the billet. In using an electrolytic bath or resistance grid to model the temperature distribution the temperature is modelled by the electrical potential with a scale factor of m_H , the heat flux is modelled by the current density with a scale factor of m_c and the thermal conductivity by the electrical conductivity with a scale factor m_K . It is then shown that the following relationship holds between the scale factors.

$$m_c = m_K \frac{m_H}{m} \quad (12)$$

This means that three of the scale factors may be chosen arbitrarily and the fourth determined from Eq.(12). The thermal processes occurring in the solidifying crust of a continually cast billet within the crystalliser were studied on an electrolytic bath. The conditions considered were with a billet of section 640 x 150 mm, using a crystalliser length of 1200 mm. The model was made of the same linear size as the natural object, the
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Electrical modelling of thermal ... E194/E435

electrolyte was water. The electrical circuit is shown in Fig.1. The method of selecting the boundary conditions is described. Experimental difficulties were encountered because of polarization of the electrodes and changes in the conductivity of the electrolyte and practical steps to overcome these difficulties are discussed. The electrodes and probes were made of electrolytic copper but to prevent oxidation, the lateral electrodes and both probes were covered with a layer of graphite mixed with suitable adhesive. The moving electrode was not coated but was cleaned before each test. The use of mixed electrodes, copper and graphite, gave rise to no appreciable e.m.f.'s. The following equation is derived and was used to determine the position of the front of hardening.

$$r = \frac{m_c \left\{ \int_0^z j' d\zeta - \frac{1}{m_c} \int_0^z k(T_{\infty} - T_K) d\zeta \right\}}{\rho \gamma w + c \gamma w m_H (E_K - E_{cp})} \quad (16)$$

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Electrical modelling of thermal ... S/148/61/000/006/001/013
E194/E435

where δ is the thickness of the solidified crust along the x axis; n is the direction of the normal to the front of solidification; $T_x(z)$ is the temperature of the liquid metal which varies over the height of the billet z; T_K is the solidification temperature; ρ is the specific heat of crystallization; γ is the specific weight; w is the speed of drawing of the billet; z is the distance from the meniscus of the metal in the crystalliser; R is half the thickness of the billet. $\lambda \frac{\partial T}{\partial x} \bigg|_{x=R}$ is denoted by q' and the corresponding current density by j . The method of using the above equation is briefly explained. If the metal is not superheated, i.e. if $T_x = T_K$, the second integral in Eq.(16) becomes zero. The value of δ was determined from Eq.(16), set up on the model and the potential difference measured. The result was considered satisfactory when the difference between the calculated and modelled thickness of crust did not exceed 1.5 mm. Results of modelling thermal processes during filling of the crystalliser are given in Fig.3 for which it was assumed that the level of the metal in the intermediate ladle is 420 mm and the spout diameter is 25 mm. In all the tests

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three variants of crystalliser filling were used: the first corresponded to pouring without metal superheat (curve 1); the second to superheated metal with the jet falling through a height of 160 mm (curve 2); the third to the same superheating temperature but the jet filling "below the level" (curve 3). When the jet was not retarded the billet was drawn at a speed of 1.15 m/min and superheated by 50°C (Fig.3a). In the second variant the superheating disappears at a depth of 200 mm. The intensive action of the jet completely washes away the crust after quite a short distance and most of the superheat of the metal is transmitted to the crystalliser walls. Therefore, the thickness of the crust on discharge from the crystalliser is only slightly less than when pouring without superheat. In the third variant the jet is narrower, its action penetrates deeper into the billet and superheat is removed only by partial melting of the crust, which is then much thinner than in the first variant on leaving the crystalliser. When the superheat was halved (Fig.3b) the thickness of the crust in the second variant did not alter but in the third increased considerably so that finally it was about the same with both variants. It is concluded that the influence of superheat on Card 5/10 ✓

Electrical modelling of thermal ...

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E194/E435

the thickness of the hardened crust may be reduced in two opposite ways: either by intensive circulation of the superheated metal in the upper zone of the crystalliser so that the heat of superheat is transmitted directly to its walls or by ensuring that the conditions are such that there is no intensive mixing of the metal and that heat is transmitted from the hardened crust to the liquid core mainly by thermal conductivity. There are 3 figures and 8 references: 7 Soviet and 1 non-Soviet. The reference to an English language publication reads as follows: D.M.Lewis, Journal of the Inst. of Metals, v.82, 1954, No.8.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

SUBMITTED: May 23, 1960

Card 6/10

S/170/61/004/003/007/013
B117/B209

AUTHOR: Iodko, E. A.

TITLE: Electrical simulation of temperature fields and determination of strains in a continuous ingot

PERIODICAL: Inzhenerno-fizicheskii zhurnal, v. 4, no. 3, 1961, 92-97

TEXT: The author showed that an approximative determination of the temperature field and the calculation of thermal stresses in the skin of a continuous ingot is possible by means of electrical simulation. This simulation was made with a set of plane lattice resistors drawn with India ink upon graph paper. The lines were 1 mm wide. A lattice with 5 mm wide cells turned out to be best suited. The model-to-nature ratio was assumed to be 1 : 1. The outer edges of the ingot were drawn with a non-conducting crayon. At a certain distance from this line, a zone whose inner boundary corresponded to the inner surface of the crystallization apparatus, was drawn with a soft graphite. The distance between this line and the contours of the ingot were chosen so that the electrical resistance corresponded to the

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Electrical simulation of ...

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thermal resistivity, during contact of the ingot with the crystallization apparatus. In this way, the graphite layer secured equal potential along the entire inner boundary of the crystallization apparatus and good contact with the lattice lines. The contours of the hardening front as found when casting a continuous ingot were drawn into the ingot model. Copper wires supplying current were connected to the two the contours at several spots. An P2/1 (R2/1)-type semiautomatic potentiometer was used to measure the potentials at the nodes of the lattice. Each of the lattices represented a simulation of the temperature distribution over the cross section of the ingot at distances of $H = 100, 200, 300$ mm, etc. On setting the arrangement, the potential difference between the contour of the hardening front and that of the inner surface of the crystallization apparatus was given. In this way the author determined the degree of similarity of electrical and temperature fields. By means of the electrical model, the temperature distribution in the crust of a continuous ingot, (640 x 150 mm) was investigated. The relative heat-exchange coefficient h was calculated on the basis of measurement of the heat currents from the ingot to the crystallization apparatus. The measurements were carried out by V. S. Rutes and D. P. Yevteyev with a 580 x 150 mm ingot. The contours of the hardening front

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Electrical simulation of ...

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were also fixed on the basis of experimental data. The experiments showed that metal casting by the conventional technique, i. e., with a single metal jet to the center of the meniscus, is the worst method since hot longitudinal cracks may form. Direction of the metal jet toward the ingot corners is equivalent to casting without superheating, as far as the tensions arising in the crust of the ingot are concerned. A sharpening of the narrow edge with a shift of the jet in the direction of this edge does not entail any increased tension. The best technique is to cast the metal in two jets; in this case, the optimum distance between the two jet axes is about 450-500mm for a 640 x 150 mm crystallization apparatus. There are 3 figures and 7 references: 6 Soviet-bloc.

ASSOCIATION: Metallurgicheskiy institut, g. Dnepropetrovsk (Metallurgical Institute, Dnepropetrovsk)

✓

Card 3/3

YODKO, E.A.; OKHOTSKIY, V.B.

Studying on models the processes of charging and melting of the charge in open-hearth furnaces. Izv. vys. ucheb. zav.; Chern. met. 5 no.9:76-83 '62. (MIRA 15:10)

1. Rabota provedena v Dnepropetrovskom metallurgicheskom institut^u pod rukovodstvom prof.doktora tekhn.nauk S.F.Chukmasova i prof. doktora tekhn.nauk V.I.Lapitskego. V rabote prinimal uchastiye inzh. Ye.S. Yeremich.

(Open-hearth process--Models)

L 16732-63
Pa-4 JD

EMP(k)/EWT(1)/EPF(n)-2/EMP(q)/EWT(m)/BD3 AFFTC/ASD/SSD PI-4/
8/124/63/000/004/019/064

AUTHOR: Iodko, E. A.

TITLE: ~~XXXXXXXXXXXX~~ 2
Distribution of heat flows in liquid part of a continuous ingot

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 4, 1963, 88, abstract 4B596
(Aspirantsk. sb. nauchn. tr. Dnepropetr. metallurg. in-t, no. 46, pt.
1, 1962, 13-27)

TEXT: Results are adduced from the experiments conducted in an industrial apparatus for continuous casting at a metallurgical plant. Tests were conducted during the casting of ingots from steel into crystallizing basins. The qualitative pattern of the distribution of heat flows in the liquid metal was studied. Graphs and approximate formulas are presented for determining the heat flows in the liquid metal. K. K. Vasilevskiy.

[Abstracter's note: Complete translation.]

Card 1/1

IODKO, E.A.

Studying the solidification process in castings by means of a
filtration model. Izv. vys. ucheb. zav.; Chern. met. 6 no.6:
51-57 '63. (MIRA 16:8)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel castings--Models) (Solidification)

IODKO, E.A.

Analytic calculation of the solidification of bodies of simple shape. Inzh.-fiz. zhur. 6 no.7:101-108 J1 '63. (MIRA 16:9)

1. Filial Ukrainskogo nauchno-issledovatel'skogo instituta metallov, Donetsk.

(Solidification)

IODKO, E., kand.tekhn.nauk

Space metallurgy. Znan.-sila 38 no.7:27 JI '63. (MIRA 16:10)

IODKO, E.A.

Analytic method for calculating temperature fields in bodies of simple shape with mobile boundaries. Inzh.-fiz. zhur. no.11:94-97 N '64. (MIRA 18:2)

1. Institut Chernoy metallurgii, g. Donetsk.

IODKO, E.A.; IL'YASHENKO, B.F.

Modeling the solidification and shrinkage process in killed
steel ingots. Izv. vys. ucheb. zav.; Chern. met. 8 no.2:53-
57 '65. (MIRA 18:2)

1. Donetskii nauchno-issledovatel'skiy institut chernoy metallurgii.

IODKO, E.A.

Calculation of convective flows in a liquid core of solidifying
bodies of simple shape. Inzh.-fiz. zhur. 10 no.1:92-100 Ja '66.
(MIRA 19:2)

1. Institut chernoy metallurgii, Donetsk. Submitted March 3, 1965.

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AUTHOR: Shklyar, V. S.; Iodko, E. A.; Podol'skaya, G. A.

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TITLE: Method of mass transfer simulation of the thermal and hydrodynamic processes

SOURCE: Gidromekhanika, no. 4, 1966, 49-55

TOPIC TAGS: thermal process, hydrodynamic process, diffusion model, mass transfer, mass exchange, Reynolds number, simulation, friction, friction stress, heat exchange, heat transfer

ABSTRACT: A study was made of the mass transfer simulation of thermal and hydrodynamic processes. The relationships to be observed for simulating heat-mass-exchange processes on a diffusion model are defined. This substantiates the possibility of diffusion simulation of hydrodynamically-similar processes in a self-similar region in the absence of equality of Reynolds numbers. This, in turn, expands the class of problems which can be solved by the diffusion model. It is

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shown that by using the diffusion model with nonreclaimable adsorption boundaries, the concentration of impurities at the boundary is not equal to zero. The study presents a method for using the results of mass transfer simulation for computing friction stresses and velocities. A procedure has also been developed for simulating heat-mass-exchange processes with the use of light-sensitive paper as the absorbent material which makes it possible to improve the reproducibility of the results and to facilitate the construction of the model. The authors acknowledge the participation of V. A. Blashchuk, G. I. Novozhilov, and T. I. Tret'yakova in this study. Orig. art. has: 2 figures and 28 formulas. [NT]

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Card 2/2

IODKO, Georgiy Bogdanovich; SKORBILINA, T.N., red.; KUZ'MINA, N.S.,
tekhn. red.

[Along forest paths; on the work of an antiepidemic expedition
in Siberia] Lesnymi tropami; o rabote protivoepidemicheskikh
ekspeditsii v Sibiri. Moskva, Medgiz, 1962. 130 p.

(MIRA 15:4)

(KRASNOYARSK TERRITORY--TICKS AS CARRIERS OF DISEASE)
(KRASNOYARSK TERRITORY--EPIDEMIOLOGY)

IODKO, L.N.

Durum wheat growing in North Kazakhstan Province. Zemledelie
27 no.1:70-72 Ja '65. (MIRA 18:3)

1. Severo-Kazakhstanskaya gosudarstvennaya sel'skokhozyaystvennaya
opytnaya stantsiya.